Connah's Quay Low Carbon Power

Environmental Statement Volume IV
Appendix 20-B: Climate Change Resilience Baseline Data and Methodology Report

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Table of Contents

Tables

1. Climate Change Resilience Baseline Data and Methodology Report

1.1 Scope of the Assessment

1.1.1 **Table 1** outlines a breakdown of climate variables that have been scoped in and out of the Climate Change Resilience Assessment (CCRA).

Table 1: Scope of Climate Variables

Climate Variable	Considered in CCRA Review	Rationale
Storms (storm surges and lightning)	In	The Proposed Development may be vulnerable to storms, storm surges, and lightning. It is expected that there will be an increase in storm events which can lead to an increase in extreme rainfall events during both winter and summer which can result in increased flood events as well as stronger winds and lightning strikes.
Extreme precipitation	In	The Main Development Area is located in an area that is susceptible to pluvial and fluvial flood risk.
Sea level rise	In	The Main Development Area is located in an area that is susceptible to sea level rise, including coastal flooding and coastal erosion.
Extreme temperatures	In	Fluctuating temperatures (extreme heat and extreme cold) could impact the structural integrity of buildings and materials.
Precipitation change	In	The Proposed Development may be vulnerable to changes in precipitation, for example, pressure on water supply during periods of reduced rainfall, and damage to structures and drainage systems during periods of heavy precipitation. The Main Development Area is located in an area that has a projected trend towards drier summers on average.
Wildfires	In	The Main Development Area is located in an area that is susceptible to wildfires.
Wind	In	The Proposed Development may be vulnerable to changing wind speeds, which

Climate Variable	Considered in CCRA Review	Rationale
		could impact the structural integrity of buildings and materials.
Estuary temperature	In	The Proposed Development is likely to be affected by a small increase in estuary temperature during its operational life, which can create issues with peak discharge temperature permit compliance due to high intake water temperatures.

1.2 Impact Assessment Methodology

Risk Assessment

1.2.1 **Table 2** highlights the criteria used to determine the likelihood of a climate change hazard occurring (Ref 1).

Table 2: Description of Likelihood for Climate Change Hazard

Term	Qualitative	Quantitative
Rare	Highly unlikely to occur	5%
Unlikely	Unlikely to occur	20%
Moderate	As likely to occur as not	50%
Likely	Likely to occur	80%
Almost certain	Very likely to occur	95%

1.2.2 The consequences descriptors are presented in **Table 3.** The categories and descriptions provided are based on the European Union (EU) Technical Guidance on Climate proofing (Ref 1).

Table 3: Consequences Analysis

Risk areas	Insignificant	Minor	Moderate	Major	Catastrophic
Asset damage / Engineering / Operational*	Impact can be absorbed through normal activity	An adverse event that can be absorbed by taking business continuity actions	A serious event that requires additional emergency business continuity actions	A critical event that requires extraordinary / emergency business continuity actions	Disaster with the potential to lead to shut down or collapse or loss of the asset / network
Safety and Health	First aid case	Minor injury, medical treatment	Serious injury or lost work	Major or multiple injuries, permanent injury, or disability	Single or multiple fatalities
Environment	No impact on baseline environment. Localised in the source area. No recovery required	Localised within site boundaries. Recovery measurable within one month of impact	Moderate harm with possible wider effect. Recovery in one year	Significant harm with local effect. Recovery longer than one year. Failure to comply with environmental regulations / consent	Significant harm with widespread effect. Recovery longer than one year. Limited prospect of full recovery
Social	No negative social impact	Localised, temporary social impacts	Localised, long-term social impacts	Failure to protect poor or vulnerable groups (1). National, long-term social impacts	Loss of social licence to operate. Community protests
Financial (for single extreme event or annual average impact) (**)	x % IRR (***) < 2 % of turnover	x % IRR 2-10 % of Turnover	x % IRR 10-25 % of turnover	x % IRR 25-50 % of turnover	x % IRR > 50 % of Turnover

Risk areas	Insignificant	Minor	Moderate	Major	Catastrophic
Reputation	Localised, temporary impact on public opinion	Localised, short-term impact on public opinion	Local, long-term impact on public opinion with adverse local media coverage	National, short- term impact on public opinion; negative national media coverage	National, long-term impact with potential to affect the stability of the Government
Cultural Heritage and cultural premises	Insignificant impact	Short term impact. Recovery or repair.	Serious damage with wider impact to tourism industry	Significant damage with national and international impact	Permanent loss with resulting impact on society

(1) Including groups that depend on natural resources for their income/livelihoods and cultural heritage (even if not considered poor) and groups considered poor and vulnerable (and often that have less capacity to adapt) as well as persons with disabilities and older persons.

(*) The ratings and values suggested here are illustrative. The project promoter and climate-proofing manager may choose to modify them.

(**) Example indicators – other indicators that may be used including costs of immediate / long-term emergency measures; restoration of assets; environmental restoration; indirect costs on the economy, indirect social costs.

(***) Internal Rate of Return (IRR).

References

Ref 1. European Commission (2021). Commission Notice — Technical guidance on the climate proofing of infrastructure in the period 2021-2027 (2021/C 373/01). Official Journal of the European Union, C 373, 1-EN.